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Pregnancy Outcomes in Women with Type 1 Diabetes Depending on the Different Modes of Insulin Therapy

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Abstract

© 2016, Springer Science+Business Media New York.The aim of the study was to evaluate the features of the effect of different modes of insulin therapy on pregnancy outcomes in women with type 1 diabetes mellitus (T1DM) with different levels of albuminuria. The study involved 155 women with T1DM during pregnancy, using various modes of insulin, and 42 infants born to women with T1DM. In order to identify a possible relationship between the level of proinflammatory cytokines and growth factors in pregnant women with T1DM and terms of delivery, we measured the daily urinary excretion of IL-1β, MCP-1, and TGF-β1 in 21 women at different trimesters of pregnancy. The use of continuous subcutaneous insulin infusion (CSII) in pregnant women with T1DM allows to prolong the pregnancy for 2–4 weeks as compared to the timing of delivery of pregnant women with T1DM receiving multiple subcutaneous injections of insulin (MPII). Pregnant women with MPII in 100% cases of the presence of microalbuminuria and proteinuria had premature delivery. Elevated levels of proinflammatory cytokines (IL-1β and MCP-1) and TGF-β1 may possibly serve as a predictor of pre-term delivery in pregnant women with diabetes type 1, starting with the early stages of pregnancy. The use of insulin by CSII in pregnant women with T1DM reduces the percentage of pre-term deliveries, regardless of the stage of diabetic nephropathy. It improves the condition of infants born at term in women with T1DM using a therapy with insulin pumps compared to that with MPII such as less common manifestation of diabetic fetopathy as macrosomia and hypoglycemia at birth, reducing the need for resuscitation in newborns.

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Keywords

IL-1β, Insulin pump, MCP-1, Outcomes of pregnancy, Pregnant women with type 1 diabetes, TGF-β1

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